



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

JUL 28 2010

In response refer to:
2008/09022

Donald Glaser
Regional Director
Mid-Pacific Region
U.S. Bureau of Reclamation
2800 Cottage Way, MP-3700
Sacramento, California 95825-1898

Subject: Response to Essential Fish Habitat Conservation Recommendations on the Long-Term Operations of the Central Valley Project and State Water Project

Dear Mr. Glaser:

NOAA's National Marine Fisheries Service (NMFS) received the Bureau of Reclamation's (Reclamation) January 12, 2010, letter responding to the Essential Fish Habitat (EFH) conservation recommendations provided by NMFS pursuant to the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended (U.S.C. 1801 *et seq.*) for the long-term operations of the Central Valley Project and State Water Project in the Central Valley, California (CVP/SWP operations). NMFS' EFH conservation recommendations were provided in combination with NMFS' biological opinion and conference opinion (Opinion) pursuant to section 7 of the Endangered Species Act (ESA) on CVP/SWP operations, which included a multi-part reasonable and prudent alternative (RPA) to avoid jeopardizing the continued existence of several listed species in the Central Valley, and avoid adversely modifying their critical habitats. The EFH conservation recommendations submitted with the Opinion were based on Reclamation's October 1, 2008, formal consultation initiation package, and were designed to protect EFH for Chinook salmon adversely affected by CVP/SWP operations. Actions specified in the EFH conservation recommendations were separated into three categories: 1) general recommendations from Appendix A of Amendment 14 to the Pacific Coast Salmon Fishery Management Plan (FMP; PFMC 2009); 2) habitat-based actions within the RPA; and 3) specific conservation recommendations for fall- and late fall-run Chinook salmon in the Central Valley system.

In 2008 and 2009, commercial fisheries in California were closed due to the collapse of the Central Valley fall-run Chinook salmon stock. Additional restrictions were put in place for 2010, allowing for a severely limited season. Review by Lindley *et al.* (2009) suggests this



recent collapse stems from a series of adverse marine and freshwater environmental factors. The report further states that habitat improvements must be made within the Central Valley freshwater environment to ensure sustainable populations of fall- and late fall-run Chinook salmon. The EFH conservation recommendations and RPA actions detailed in the Opinion are an integral first step towards this goal.

Essential Fish Habitat Provisions

The MSA requires that EFH be identified and described in federal FMPs [16 §U.S.C. 1853(a)(7)]. The Pacific Salmon FMP identifies and describes EFH for Central Valley Chinook salmon to include the Sacramento and San Joaquin Rivers and their tributaries (50 CFR § 660.412). Pursuant to the MSA, federal agencies must consult with NMFS with respect to any action authorized, funded, or undertaken, or proposed to be, that may adversely affect EFH [16 §U.S.C. 1855(b)(2)]. If NMFS determines that a proposed federal action would adversely affect EFH, then NMFS has an obligation to provide EFH conservation recommendations to the federal action agency [16 §U.S.C. 1855 (b)(4)(A)]. Any federal agency that receives an EFH conservation recommendation must provide a detailed response in writing to NMFS within 30 days, and include in its response a description of measures proposed by the agency to avoid, mitigate, or offset impacts to EFH. In the case of a response that is inconsistent with NMFS' EFH conservation recommendation, the federal agency must explain its reason for not following the recommendation. This explanation must include scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects [50 CFR §600.920(k)].

Reclamation's Response to EFH Recommendations

The NMFS appreciates Reclamation's time and consideration in reviewing the EFH conservation recommendations. However, Reclamation's January 12, 2010, response does not fully satisfy the consultation requirements in the EFH regulations [50 CFR § 305(b)(4)(B)]. In your written response, Reclamation does not clearly identify whether or how effects of CVP/SWP operations on fall- and late fall-run Chinook salmon EFH will be addressed. Specifically, the response does not sufficiently identify measures that will be implemented to avoid, mitigate, or offset the impact of CVP/SWP operations on EFH.

For example, conservation recommendation B.1 requests that Reclamation work through the appropriate CALFED program to investigate alternatives to the rice decomposition program and recommend ways to stabilize or increase flows after September 30 to reduce redd dewatering. Reclamation's response that NMFS' measure is not consistent with the CALFED Water Use Efficiency Program, and that Reclamation is committed to work through CALFED and the Central Valley Project Improvement Act to help address fishery needs in the upper Sacramento River fails to recommend a specific measure to address and/or reduce the effects of the rice decomposition program on lower in-stream flows and redd dewatering within the mainstem Sacramento River.

As further example, Reclamation's response to conservation recommendation E.2 states that the 24-month period is not long enough to provide solutions and that it is not practical to shut down the main export pumps for short periods of time. Reclamation does not describe why certain

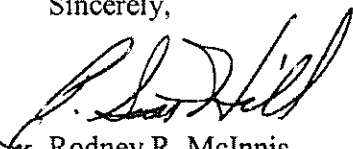
aspects of NMFS' recommendation are infeasible to implement nor does it identify alternative specific measures that avoid, minimize or otherwise compensate for effects on EFH.

NMFS respectfully requests that Reclamation re-evaluate all of their responses to NMFS' EFH conservation recommendations and clarify specific actions Reclamation will implement to reduce effects to fall- and late fall-run Chinook salmon EFH. If Reclamation intends to follow a recommendation provided by NMFS, Reclamation should clearly state so, including referencing an RPA action, and describe any steps that will be taken to implement the recommendation. Pursuant to 50 CFR 600.920 (j), if Reclamation does not intend to follow a recommendation provided by NMFS or disagrees with the need to protect fall- and late fall-run Chinook salmon EFH, Reclamation should clearly state so and provide the scientific justification for any such disagreement with NMFS over the anticipated effects of the proposed action or measures needed to avoid or offset such effects.

In addition to the need to comply with EFH consultation requirements for fall-run Chinook salmon EFH, NMFS reminds Reclamation of their responsibility to initiate consultation and provide an EFH Assessment regarding potential adverse effects of the CVP/SWP operations on EFH for species managed under the Coastal Pelagic Species FMP and the Pacific Coast Groundfish FMP. As requested in our July 2, 2008, letter (enclosed), the EFH Assessment should include a complete list of managed species within those FMPs that may be affected by CVP/SWP operations, including effects on specific life history stages and analyses of how modeled climate change scenarios would likely affect future operations and managed species throughout the action area and on all life history stages. The Coastal Pelagic Species FMP includes five species, and the Pacific Coast Groundfish FMP covers more than 90. Due to the large number of species covered under the Pacific Coast Groundfish FMP, NMFS provided Reclamation with a list of focus species for which to base the analysis of effects for groundfish EFH.

NMFS appreciates the substantial amount of effort that Reclamation has dedicated to the ESA and EFH consultations for this project. We look forward to continuing to work cooperatively with Reclamation and are available for technical assistance as this process continues. If you have any questions regarding the EFH components of this consultation, please feel free to contact Tristan Leong of my staff at 916-930-3724 or Tristan.Leong@noaa.gov.

Sincerely,



for Rodney R. McInnis
Regional Administrator

Enclosure

cc: Michael Chotkowski, Reclamation, Sacramento
Bob Hoffman, NMFS, Long Beach
Bryant Chesney, NMFS, Long Beach
Chris Yates, NMFS, Long Beach
Eric Chavez, NMFS, Long Beach
Dick Butler, NMFS, Santa Rosa
Howard Brown, NMFS, Sacramento
Garwin Yip, NMFS, Sacramento
Copy to file: 151422SWR2006SA00268

References Cited

- Lindley, S.T., C.B. Grimes, M.S. Mohr, W. Peterson, J. Stein, J.T. Anderson, L.W. Botsford, D.L. Bottom, C.A. Busack, T.K. Collier, J. Ferguson, J.C. Garza, A.M. Grover, D.G. Hankin, R.G. Kope, P.W. Lawson, A. Low, R.B. MacFarlane, K. Moore, M. Palmer-Zwahlen, F.B. Schwing, J. Smith, C. Tracy, R. Webb, B.K. Wells, and T.H. Williams. 2009. What caused the Sacramento River fall Chinook stock collapse? NOAA Technical Memorandum, NMFS Southwest Fisheries Science Center. NOAA-TM-NMFS-SWFSC-447. 61 pages.
- Pacific Fishery Management Council. 2009. Description and identification of essential fish habitat, adverse impacts and recommended conservation measures for salmon. Amendment 14 to the Pacific Coast Salmon Plan, Appendix A. Pacific Fisheries Management Council, Portland, Oregon.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

In response reply to:
2006/07858

JUL 02 2008

Mr. Ronald Milligan
Operations Manager
Central Valley Operations Office
U.S. Bureau of Reclamation
3310 El Camino Avenue, Suite 300
Sacramento, California 95821

Dear Mr. Milligan:

This is in response to the Bureau of Reclamation's (BOR) May 16, 2008, letter requesting to initiate formal consultation with NOAA's National Marine Fisheries Service (NMFS) under section 7 of the Endangered Species Act (ESA). The request was received on May 19, 2008. The consultation concerns the potential effects of the Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP) on the following NMFS' jurisdictional species:

- Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*) and their designated critical habitat,
- Central Valley spring-run Chinook salmon (*O. tshawytscha*) and their designated critical habitat,
- Southern Oregon/Northern California Coast coho salmon (*O. kisutch*) and their designated critical habitat,
- Central Valley steelhead (*O. mykiss*) and their designated critical habitat,
- Central California Coast (CCC) steelhead (*O. mykiss*) and their designated critical habitat,
- Southern Distinct Population Segment of North American green sturgeon (*Aspenser medirostris*), and
- Southern Resident killer whales (*Orcinus orca*).

The May 16, 2008, letter enclosed a biological assessment (BA) that was missing the appendices. NMFS was subsequently notified by BOR that the BA was being revised, and that a new BA would be submitted on May 20, 2008. On May 20, 2008, NMFS received the revised BA. On May 30, 2008, BOR hand delivered a revised BA containing the appendices and modeling results. This is the most recent BA received by NMFS and is consistent with the BA the BOR provided to the U.S. Fish and Wildlife Service.



In addition, although your transmittal letter did not request Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended in 1996, the BA provided an EFH assessment in Chapter 16.

NMFS understands the challenge in preparing a BA on a project operation as vast and complex as the joint operations of the CVP and SWP. We appreciate the work that has gone into modeling project operations and attempting to predict effects on salmonids and green sturgeon. Much of the information you have provided will be critically important to us in developing our biological opinion.

As you may recall, the Department of Commerce, Office of Inspector General's (OIG) report of July 8, 2005, found deficiencies in the 2004 OCAP consultation related to the initiation package based on incomplete information. Specifically, "Contrary to the NMFS normal process, the regional office initiated the formal consultation with insufficient information, rather than suspending it until the BOR provided the information" (OIG report page ii). Therefore, NMFS is committed to not initiating formal consultation on OCAP until it determines that the initiation package is sufficient and complete.

As you know, over the last 30 days, my staff has been required to spend many hours preparing for the various required court filings and testimonies pursuant to the Pacific Coast Federation of Fishermen's Associations/Institute for Fisheries Resources *et al.* vs. Gutierrez *et al.* court case. As a result, we did not have time to conduct a detailed review and comment on the OCAP BA. Nonetheless, staff has had adequate time to review the information provided with your letter and found that all of the information necessary to initiate formal consultation has not been provided in certain key areas. Formal consultation shall not be initiated by a Federal agency until a BA has been completed and submitted to NMFS, as outlined in the regulations governing interagency consultation [50 CFR § 402.14(c)]. Formal consultation begins once NMFS has received all of the information necessary to evaluate the effects of the action on listed species and critical habitat. This letter transmits the information that is necessary to initiate ESA formal consultation and conduct an EFH consultation. The Enclosure provides our initial comments on the BA. NMFS may provide the BOR with additional comments on the OCAP BA at a later date during the consultation process [50 CFR 402.14(e)] following our complete review.

Endangered Species Act

Over the last two-plus years, NMFS staff provided technical assistance to BOR in the form of general and specific comments on the OCAP BA towards the development of a complete initiation package. All previous comments are incorporated by this reference and should be addressed in their entirety in the OCAP BA.

In addition, NMFS requires the following general information to initiate formal consultation on OCAP, as outlined in the regulations governing interagency consultation (50 CFR 402.14). We did not review chapters pertaining to Delta smelt or long-fin smelt. The Enclosure provides some more specific information required in the initiation package.

1. A description of the action to be considered [50 CFR 402.14(c)(1)].

The project description in the OCAP BA needs to be described in sufficient detail so that an analysis of effects can be conducted. Gaps in the project description include actions that are not reasonably foreseeable, but modeled in the analysis of effects, and therefore, reveal inconsistencies between the proposed action and the analysis of effects. For example, the modeling assumes a Vernalis Adaptive Management Plan (VAMP)-like action will continue through 2030, but the current VAMP action expires in 2009 with no stated renewal clause.

2. A description of the specific area that may be affected by the action [50 CFR 402.14(c)(2)].

The term "action area" is mentioned multiple times throughout the BA, but not defined. The geographical/spatial areas for the ESA and EFH consultations appear to be substantially different and inconsistent.

3. A description of any listed species or critical habitat that may be affected by the action [50 CFR 402.14(c)(3)].

CCC steelhead designated critical habitat should be included in the ESA consultation. Operation of the Suisun Marsh salinity control gates does affect CCC steelhead designated critical habitat.

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects [50 CFR 402.14(c)(4)].

The BA needs:

- a. Analyses of all proposed operations on all listed species that may be affected, including all of the environmental "stressors" (physical or biotic) caused by the proposed action to which each life history stage and each species would be exposed. The BA should include an analysis of the likely response of each life history stage and species to such stressors. Once effects are established at the individual level, effects need to be aggregated to determine the extent of the effects resulting from implementing the proposed action on broader scales, for example, at the river reach, tributary, and Division scales.
- b. Best scientific and commercial data available to support the effects analysis and conclusions;
- c. Summaries of recent past operations and the effects in instream flows, temperature, carryover storage, *etc.*, in conjunction with the modeling. Especially where an element of the proposed action cannot be modeled, such as in the application of adaptive management processes like the Sacramento River Temperature Task Group, the actual performance of these processes in the recent past should be analyzed and discussed as part of the environmental baseline. If the proposed adaptive management processes are the same as those that functioned in the past, then BOR can utilize the environmental baseline to

determine the expected effectiveness of the adaptive management processes in the effects of the action section.

- d. Additional modeling scenarios which NMFS has requested, but are not provided in the BA. We request a meeting with your modelers to design a realistic worst-case scenario. We have recently been criticized in other actions for not including realistic assumptions about future water demands, *etc.* We believe it is especially important to run a scenario that assumes all CVP B2 water is used for in Delta actions by March, and that this water is therefore unavailable for actions later in the water year. Also, it is reasonable to run a scenario with successive critically dry years, removing the 1.9 million acre feet storage soft target, *etc.*
 - e. Analyses of how the modeled climate change scenarios (Study 9.0 suite) would likely affect future operations and listed species throughout the action area and on all life history stages; and
 - f. Consideration of the effects of the proposed action within the context of the impacts of the environmental baseline and cumulative effects.
5. Relevant reports, including any environmental impact statement, environmental assessment, or BA prepared [50 CFR 402.14(c)(5)].

NMFS needs the report from the contracted technical review of the 2008 OCAP BA, and responses to the recommendations from the peer review of the NMFS 2004 OCAP biological opinion.

6. Any other relevant available information on the action, the affected listed species, or critical habitat [50 CFR 402.14(c)(6)].
 - a. Chapters 1 (Summary of Obligations Relevant to the Action) and 2 (Project Description) contain citations to numerous "agreements" that dictate project operations. The details of these agreements may be central to analyzing effects of the operations. We request that you scan and provide a DVD with any of these documents that contain significant detail on project operations.
 - b. References need to be included for all references cited.

Essential Fish Habitat

NMFS requires the following general information in order to conduct a thorough EFH consultation, as outlined in the regulations implementing the EFH provisions of the MSA (50 CFR 600.920). The enclosure provides some more specific information required.

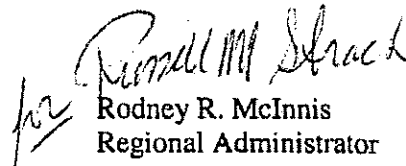
1. An analysis of the potential adverse effects of the action on EFH and the managed species [50 CFR 600.920(e)(3)(ii)]. The EFH Assessment lacks:
 - a. a complete list of managed species within the Pacific Coast Salmon, West Coast Groundfish and Coastal Pelagic Species Fisheries Management Plans that may be affected by OCAP;
 - b. in-depth analyses of all proposed operations on all managed species that may be affected, including sufficient detail to accurately assess potential impacts to EFH at

- various scales (e.g., within a given watershed for salmon) and effects on specific life history stages; and
- c. analyses of how the modeled climate change scenarios would likely affect future operations and managed species throughout the action area and on all life history stages.
 2. Given the general scope and complexity of the project, as much additional information as possible, as described in section 600.920(e)(4) of the EFH regulations, should be provided in the EFH Assessment.
 3. The EFH Assessment needs to have a clear delineation of the action area.

Once we receive this additional information, we will send you a notification letter, which will also outline the dates within which formal consultation should be completed and the biological opinion delivered on the proposed action.

NMFS appreciates the tremendous efforts of BOR and Department of Water Resources staff in developing the BA. NMFS will continue to be available to provide BOR with technical assistance towards the development of a complete BA and initiation package. Please contact Mr. Garwin Yip at (916) 930-3611, or via e-mail at garwin.yip@noaa.gov, if you have any questions concerning this letter or require any additional information.

Sincerely,


Rodney R. McInnis
Regional Administrator

Enclosure

cc: Copy to file – ARN 151422SWR2006SA00268
NMFS-PRD, Long Beach, CA
Ann Lubas-Williams, BOR, 2800 Cottage Way, Sacramento, CA 95825
Jerry Johns, Deputy Director, 1416 Ninth Street, P.O. Box 942836, Sacramento, CA 94236-0001
Kathy Kelly & John Leahigh, DWR, 1416 Ninth Street, P.O. Box 942836, Sacramento, CA 94236-0001
Cay Goude, Ryan Olah, & Susan Moore, USFWS, 2800 Cottage Way, Sacramento, CA 95825
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Perry Herrgesell, CDFG, 4001 North Wilson Way, Stockton, CA 95205

**Additional Information Necessary to Initiate Endangered Species Act Formal Consultation
and Essential Fish Habitat Consultation on the
Central Valley Project and State Water Project Operations Criteria and Plan
June 30, 2008**

Endangered Species Act

Over the last 2 plus years, NMFS staff provided technical assistance to Reclamation in the form of general and specific comments on the Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP) biological assessment (BA) towards the development of a complete initiation package. The following letters and comment documents are hereby incorporated by reference and should be addressed in their entirety in the OCAP BA (or responses as to why they are not incorporated).

- i. NMFS' June 19, 2006, letter responding to the Bureau of Reclamation's (Reclamation's) April 26 and May 19, 2006, requests to initiate formal consultation, which provided the information necessary in order to initiate formal consultation.
- ii. NMFS' February 21, 2008, letter to Reclamation and the Department of Water Resources, providing comments with regard to the development of the OCAP BA, and particularly, the draft project description.
- iii. Multiple e-mails from the U.S. Fish and Wildlife Service (FWS submitted on behalf of FWS, NMFS, and DFG) providing specific comments on various chapters of the OCAP BA, including the legal setting (Chapter 1) and project description (Chapter 2).
- iv. February 15, 2008, e-mails from Jeff Stuart (NMFS) to Shane Hunt (Reclamation), transmitting comments on species accounts for the anadromous salmonid species and green sturgeon (Chapters 3-6, and 8).

In addition, the following information is required to initiate Endangered Species Act (ESA) formal consultation.

1. **A description of the action to be considered [50 CFR 402.14(c)(1)].**
 - a. Federal actions that warrant consultation are all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02). Lower Joice Island and Cygnus Units (OCAP BA pp.2-109 through 2-110) are no longer operated by DWR or BOR, therefore should not be part of the OCAP project description.
 - b. Various actions are not reasonably certain to occur, and therefore, should not be modeled as part of the proposed action. For example:
 - i. The Vernalis Adaptive Management Plan, as part of the San Joaquin River Agreement, will expire on December 31, 2009, unless extended pursuant to the conditions of the agreement (OCAP BA p.1-12);
 - ii. The Environmental Water Account (EWA) program expired in 2007. The agencies are currently undertaking an environmental analysis of extending the EWA to 2011 (OCAP BA p.1-11). Also, the OCAP BA (p.2-21 & 22) is clear in stating that the future of the EWA is unclear and no decision has yet been made on what that

program would look like. Until a new EWA is agreed to it is invalid to claim the operational assets granted the EWA in the CALFED Record of Decision (ROD). It is not appropriate to unilaterally label short-term actions, like VAMP and the Yuba Accord, as EWA and claim the long-term operational assets granted in the CALFED ROD.

- iii. The Yuba Accord, Component 1 Water, would be an EWA asset, but scheduled to expire in 2015 (OCAP BA p.2-21).
- iv. The OCAP BA, p.2-118, penultimate paragraph, states, "The proposed Phase 8 program has some of the characteristics of a transfer program in that water will be provided upstream of the Delta and increased exports may result. This is a potential future action that is not included in this consultation. However, should the phase 8 program be approved, water made available from the program could be transferred as part of the transfer water analyzed in this project description." Because the proposed Phase 8 program is not included in this consultation, then the effects of the program (*i.e.*, transfers) should not be included/considered in this consultation.
- c. The OCAP BA, p.2-121, 1st paragraph under "500 cfs Diversion...", states, "This operation is being incorporated into the OCAP project description and permitting will continue via the OCAP biological opinions." NMFS does not issue a permit at the end of an ESA section 7(a)(2) formal consultation. Therefore, the biological opinion that NMFS issues cannot replace the requirement for another permit.
 - i. There needs to be a better clarification of the additional allotment of 500 cfs during the summer to the pumping rate at Banks (under the CALFED ROD) to go to EWA assets when the EWA has been diminished.
- d. The proposed action is not adequately described. For example:
 - i. OCAP BA p.2-7 states that a maximum of "about 300 cfs" will be diverted by the Freeport Regional Water Project. Please be exact or specify exact range and criteria for choosing levels within that range. What "agreement" is being referenced in the project description here?
 - ii. OCAP BA pp.2-14 through 2-19, Real Time Decision-Making: Please provide a schematic of how all geographic and project-wide groups work. What are their exact mandates, what organizations are represented in the groups, and how do they report information or recommendations to whom. This would assist in our understanding and provide public transparency of the adaptive management process.
 - iii. OCAP BA p.2-19 Clear Creek: please provide the "August 2000 agreement" referenced here.
 - iv. OCAP BA p 2-20 American River: What are the draft criteria being developed by the California Department of Fish and Game (DFG) that Reclamation is using? Please include these draft criteria in the project description.
 - v. OCAP BA p.2-21 and 2-22, EWA. This section is clear in stating that the future of the EWA is unclear and no decision has yet been made on what that program would look like. Until a new EWA is agreed to, it is invalid to claim the operational assets granted the EWA in the CALFED ROD.
 - vi. OCAP BA p.2-22, paragraph just above the section, "Central Valley Project": In the first sentence, what does; "and related action" mean? Without elaboration, it could mean all actions related to ensuring the adequate quantity and timing of flows that

- would ensure the timely outmigration of anadromous salmonids from the San Joaquin River.
- vii. OCAP BA p.2-41, Red Bluff Diversion Dam (RBDD): How is the emergency closure provision modeled, if at all?
 - (a) What evidence does Reclamation have that the 12-in opening is sufficiently protective of green sturgeon trying to pass upstream and downstream through RBDD?
 - viii. OCAP BA p.2-47, American River: The American River flow management standard needs to include temperature criteria. Without it, Reclamation, and subsequently, NMFS, cannot analyze the effect of operations on the American River on listed anadromous fish species. Also, please provide agreements with upstream operators of the dams scanned on a DVD. Please provide flood control agreement between Reclamation and Sacramento Area Flood Control Agency scanned on a DVD. Also, the last paragraph has a placeholder for the present level of American River Division water delivery.
 - (a) NMFS appreciates that the flow management standard has been included in the project description, but we need the project description or an appendix to include the exact language and details of the flow management standard so that we may consult on it.
 - ix. OCAP BA p.2-62. The description of the New Melones operations is confusing and conflicting. Applicable water policies are "inferred" and "assumed." Was the temperature criterion purposefully eliminated? What are the proposed flows and temperatures at different times of year under different water year types? The project description says "under new operation procedures similar to what is described [sic] here." What exactly is NMFS to consult on? Also we note that the 1997 Interim Plan of Operations (IPO) is inconsistent with the CALSIM model. The section implies that operations will follow the present IPO and at the same time describes that current operations deviate regularly from the IPO. Annual monthly flow schedules and habitat and temperature attributes relating to those flows must be presented in the BA in order to assess the effects of New Melones operations. It appears that annual decisions are made for allocation of water to the various categories and priorities listed, but there is no description of the process, nor what is the decision-making entity. There is no reference in the text to Table 2-11. Any long-term plan of operation for New Melones Reservoir will require re-initiation of the OCAP consultation.
 - x. OCAP BA p.2-67: Please explain/clarify the statement within the Friant Division, "This division operates separately from the rest of the CVP and is not integrated into the CVP OCAP, but its operation is part of the CVP for purposes of the project description." We assume that current Friant operations are part of the project description. We understand that future Friant operations conducted through the San Joaquin River Restoration Program are not ready for this consultation. That future operation will need to be integrated into larger OCAP operations and will require a re-initiation of the OCAP consultation. Until those operations are in effect, the BA needs to describe in sufficient detail the effect of current Friant operations on the listed species in the San Joaquin River tributaries, the San Joaquin River, and the Delta so that NMFS can consult on this portion of the CVP's operations.

- xi. Figure 2-12 (OCAP BA p.2-77) is referred to when describing the Oroville Field Division. However, the text in figure 2-12 is so small that it is barely legible, and therefore, not a very useful graphic in understanding the current and proposed action in the Feather River. Please enlarge figure 2-12 to a full page and ensure that the text is legible.
- xii. OCAP BA p.2-119: Is the Yuba Accord part of the project description and subject to this OCAP consultation? If so, please provide a copy of it, scanned on a DVD.

2. A description of the specific area that may be affected by the action [50 CFR 402.14(c)(2)].

- a. Although the action area is mentioned multiple times throughout the BA, it is not defined. For example:
 - i. The OCAP BA (p.14-7) stated that, "[s]almon originating in California streams are estimated to contribute 3 percent of salmon population off the Washington coast...", which indicates that the action area includes the Pacific Ocean off the coasts of California, Oregon, and Washington.
 - ii. EFH (OCAP BA p.16-2) appears to be limited to freshwater and the Bay/Delta. Since the action area is expanded to include the Pacific Ocean, the EFH assessment would likely include the EFH of additional managed species.
- b. Chapters of the BA, where applicable (e.g., environmental baseline, effects of the action, summary of effects analysis, and EFH assessment), need to be adjusted based on the extent of the action area.

3. A description of any listed species or critical habitat that may be affected by the action [50 CFR 402.14(c)(3)].

- b. Central California Coast steelhead designated critical habitat should be included in the consultation (OCAP BA page 3-2) because the action area extends into Suisun Marsh.

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects [50 CFR 402.14(c)(4)].

- a. An effects analysis, including justification and rationale, needs to be provided regarding why OCAP is not likely to adversely affect Central California Coast (CCC) steelhead (OCAP BA page 3-2).
- b. An effects analysis should be included for CCC steelhead designated critical habitat.
- c. An effects analysis should be included for the Southern Distinct Population Segment (DPS) of North American green sturgeon for the Suisun Marsh Salinity Control Structure, the Morrow Island Distribution System, and the temporary barriers.
- d. An effects analysis for all species should be included for Roaring River and Goodyear Outfall (and Lower Joice Island and Cygnus Unit, if applicable).
- e. OCAP BA p.9-35, Level of Development (Land Use): Under the heading of "Sacramento Valley," why is the American River excluded? What is the effect of this on the results of the modeling? Was American River temperature control modeled?
- f. OCAP BA p.9-41, Regulatory Standards: Under the heading of "Upper Sacramento River," exactly what assumptions are built into the Shasta portion of temperature control. Where is the compliance point set?

- g. Combining all water year types into only 2 classifications [wet years (which combines wet and above normal water year types) and dry years (which combines below normal, dry, and critical)] for salvage and loss tends to over simplify results. Averaging the water year types will not provide worst case and best case scenarios. Salvage and loss would be more appropriately looked at by comparing all water year classifications.
- h. NMFS has requested additional modeling scenarios be conducted and these scenarios have not been conducted. We request a meeting with your modelers to design a realistic worst case scenario. We have been recently been criticized in other actions for not including realistic assumptions about future water demands, *etc.* We believe it is reasonable, and especially important, to run a scenario that assumes full build out of contract water demands with only guaranteed minimization measures (*i.e.*, all b2 water is used for in Delta actions by March, and that this water is therefore unavailable for actions later in the water year; no temperature control on the American River; the soft target of 1.9 million acre feet carryover storage in Shasta Reservoir not being met; and successive critically dry years).
- i. Southern Resident killer whales: Chapter 14 concludes with a "may affect," whereas it should have a subsequent effect determination of "not likely to adversely affect" or "likely to adversely affect." The mechanism for the "may affect" is a potential reduction in killer whale prey, but because of the lack of analysis, we don't know what the effects are. The analysis is limited to "may" and "could" without an analysis of the probability or extent of effect. The chapter provides more discussion of why an analysis cannot be done, rather than conducting an analysis while understanding and acknowledging the data gaps. In order to determine the effects of the action on Southern Resident killer whales, the question, "Does the project reduce prey availability in the **short-term** or hinder viability/recovery potential of prey in the **long-term**?" needs to be answered.
 - i. **Short-term effects** can be evaluated by comparing: (1) the level of prey reduction caused by project operations and (2) the level of mitigation from the action agencies' funding of hatcheries.
 - (a) The level of prey reduction caused by project operations can be quantified by quantifying the level of mortality on the salmonid life-stages affected, and evaluating how that level relates to fewer salmon in the ocean.
 - (b) Data necessary to determine the level of mitigation from the action agencies' funding of hatcheries include the percentage of returning Chinook salmon (all runs) that are hatchery-origin fish and the percentage of all funding for Chinook salmon hatchery programs that is contributed by the action agency(s). For example, if 50 percent of returns are hatchery-origin and the action agencies contribute 25 percent of all funding for Chinook salmon hatchery programs, then the action agencies are responsible for making $0.5 * 0.25 = 12.5$ percent of the Chinook salmon that return. Using the above example, the level of mitigation (12.5 percent) is compared to the level of prey reduction caused by project operations.
 - ii. **Long-term effects** can be tied to the conclusions for salmon, provided analyses are conducted on all runs of Chinook salmon.
- j. Climate change: Climate change (Study 9 suite) was modeled for 4 scenarios: (1) wetter and more warming, (2) drier and more warming, (3) wetter and less warming, and (4)

drier and less warming. The results were applied to hydrology, and effects on potential reservoir storage and egg mortality. However, the model and BA lack:

- i. discussions of the implications of the model results for fish, including other life history stages besides eggs;
 - ii. other temperature effects, like effects on foraging, growth, development, susceptibility to disease, and changes in the aquatic food web;
 - iii. changes in peak flow timing and amount of flow, and the effects of extended drought periods;
 - iv. climate change effects on ocean conditions, including potential changes in Pacific Decadal Oscillation/El Nino Southern Oscillation cycles, ocean acidification, and the effect of sea level rise on operations in the Delta. These effects from climate change are cumulative effects that need to be considered in concert with the effects of the action. As ocean conditions change, the species will likely respond differently to the effects of the action.
 - v. comparison between study 9 (climate change) and study 7.0 (environmental baseline).
 - vi. consideration of the effects of climate change in the summary of effects analysis (OCAP BA chapter 15).
- k. Effects of the action "refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." (50 CFR 402.02).
- i. The environmental baseline section should include the past and present impacts of all Federal, State, or private actions in the action area, including the past and present impacts of OCAP on each of the listed species. For example:
 - (a) OCAP BA p.6-39 says,

"Water is drawn from the central Delta through lower Old River and Middle River to the export pumps when combined CVP/SWP pumping exceeds the flow of the San Joaquin River water down the upper reach of Old River and Middle Rivers. This situation likely increases the risk of juvenile salmon migrating to the south Delta and perhaps being entrained at the SWP and CVP facilities. This condition can be changed either by reducing exports or increasing Delta inflows or the use of physical barriers and gates. Decreasing exports to eliminate net upstream flows (or, if net flows are downstream, cause an increase in positive downstream flows) may reduce the chances of migrating juvenile salmonids moving up lower Old River towards the CVP/SWP diversions. Tidal flows, which are substantially greater than net flows, play an important role in salmon migrations."

Base on the above paragraph, the reader does not know what the current operations of the CVP and SWP are, and their influences on the timing and survival of emigrating juvenile Chinook salmon.
 - (b) OCAP BA p.1-7 (Water Contracts): Please provide NMFS with, or refer us to, the specific location in the appendix where actual contracted deliveries are summarized for the last 15 years.

- ii. The BA needs to describe the cumulative effects of future reasonably certain to occur State, Tribal, local, or private actions in the action area.
- iii. Chapter 10 (CVP and SWP Reservoir Operations) provides a great deal of modeling information and results on the major tributaries. However, the entire chapter lacks any interpretation of model results or synthesis of effects on the listed species. For example, the specific number of years that Shasta End-of-September carryover storage is not likely to be met in the future is not indicated. This is critical for determining future impacts on cold water availability.
- iv. The Feather River section (OCAP BA pp.10-56 through 10-57) is very confusing and appears to use a different set of criteria for evaluation of SWP operations (*i.e.*, CESA or NEPA) than the OCAP BA. The operations on Feather River compare OCAP model runs to Study 4a, which appears to be from the 2004 OCAP BA, and is not a model run described in the 2008 OCAP BA.
- v. Chapter 11 should have incorporated the impacts identified in Chapter 10 and explained how they would impact individuals and then populations. Unfortunately, it does not go beyond making general statements about the impacts, and without citations or scientific rationale. For example, "Effects of RBDD operation on steelhead run timing would be unchanged from the current condition. About 16 percent of steelhead would still be delayed. Steelhead this early in the run are not ready to spawn and steelhead are repeat spawners so the slight delay of a small portion of the steelhead run is not a big effect on steelhead" (OCAP BA pp.11-47 through 11-48).
- vi. The critical habitat analysis (OCAP BA pp.11-78 through 11-79) lacks any analysis of effects of the action on primary constituent elements or essential features of critical habitat, and does not quantify impacts or summarize the significant effects resulting from project operations discussed in Chapter 10. Instead, the reader is referred to earlier chapters (3 and 5) that describe the life history of salmonids and their critical habitat designations. In the environmental baseline section, Reclamation needs to describe the critical habitat for each anadromous salmonid species in the action area by life history stage and habitat needs, then describe the past and present impacts of all Federal, State, or private actions in the action area, including the impacts past and present impacts of OCAP on those primary constituent elements and habitat features. Only then will NMFS, and other readers, understand Reclamation's summary of effects in chapter 11 that all primary constituent elements in the upstream areas (chapter 11) will remain about the same as a result of the project. Despite a lack of critical habitat analysis for the Delta (chapter 13), "likely to adversely affect" effect determinations were made for all anadromous salmonid designated critical habitats (chapter 15).
- l. In consideration of the risks associated with hatchery raised mitigation fish (OCAP BA pp.11-74 through 11-78), Reclamation should analyze the proposed operations of the Feather River Hatchery, rather than utilize the no action alternative under the National Environmental Policy Act (NEPA).
- m. Use of the NEPA term "less than significant" is inappropriate to characterize effects of the South Delta Improvement Project in an ESA evaluation.
- n. CVP and SWP delta effects on species (Chapter 13)

- i. Based on the analysis provided, the reader is not able to ascertain the magnitude of direct and indirect effects on listed species.
- ii. Combining water years into only two classifications (wet and dry years) tends to oversimplify results and effects to listed species.
- iii. The results for salvaged steelhead are probably significantly underestimated because steelhead salvage results are only based on non-clipped (wild) juveniles observed at the Delta Fish Facilities from 1998-2007. Since Coleman National Fish Hatchery and Feather River Hatchery steelhead are considered part of the CV steelhead DPS, all hatchery and wild fish need to be considered in the Delta effects section. The proportion of the total hatchery fish salvaged that are Coleman National Fish Hatchery and Feather River Hatchery origin also needs to be determined. Likewise, since salvage of hatchery winter-run Chinook salmon is not reported, those results are likely underestimated as well.
- iv. Temporary barriers:
 - (a) Effects to green sturgeon need to be analyzed (OCAP BA pp.13-59 through 13-61).
 - (b) Mitigation measures are described as "a necessary part of ESA consultation," yet no measures are described. This also indicates an inadequate project description.
 - (c) A notch in the barriers is described as providing passage for migrating adult salmon (OCAP BA p.13-62), but this was not described in chapter 2 (Project Description). In addition, there is no analysis to determine the effects (*i.e.*, effectiveness) of this "mitigation/conservation" measure on all of the anadromous listed species.
 - (d) The "design of the gate structures also will ensure successful passage" (OCAP BA p.13-69), yet no design is shown, or explanation given for this conclusion. The first part of this effects discussion says green sturgeon are *not blocked*, yet the second part says that their movement will be *minimized*. This statement seems to contradict the conclusion.
- o. Much of the statements and conclusions regarding the effects of the action need scientific bases, with reference to best scientific and commercial data available.
- p. All conclusions in Chapter 15 (Summary of Effects) end in "likely to adversely effect," yet there is no scientific basis for each conclusion.

5. Relevant reports, including any environmental impact statement, environmental assessment, or biological assessment prepared [50 CFR 402.14(c)(5)].

- a. Technical review of the BA: Maria Rea's July 30, 2007, declaration (submitted to the United States District Court, Eastern District of California, pursuant to Pacific Coast Federation of Fishermen's Associations/Institute for Fisheries Resources, *et al.*, vs. Carlos M. Gutierrez *et al.*, case number 1:06-CV-245 OWW LJO) stated that (aside from the specific dates) a final biological opinion would likely be issued 9 months after a final, technically reviewed, BA is issued. To date, NMFS has not been successful in obtaining a copy of the technical review report. Also, Reclamation is currently in the process of "...working on our response report to the OCAP technical review panel report..." [June 16, 2008, e-mail from Donna Garcia (Reclamation) to Rhonda Reed (NMFS)], which means either (1) Reclamation does not intend to incorporate the technical review

- comments into the BA, or (2) Reclamation plans on issuing another revised BA to the U.S. Fish and Wildlife Service (FWS) and NMFS. Please provide NMFS the technical review report and your answer as to whether a revised BA that addresses the review is forthcoming, or if no further changes to respond to the review will be made to the BA.
- b. The NMFS 2004 OCAP biological opinion was peer reviewed by the California Bay-Delta Authority, Center for Independent Experts, and also the NMFS-Southwest Fisheries Science Center. Biological opinions are based on information provided in biological assessments. Although the peer reviews pertained to the NMFS' 2004 OCAP biological opinion, many of the comments applied to the 2004 OCAP BA. For example:
 - i. The California Bay-Delta Authority (January 3, 2006) review identified 15 specific issues or areas in the biological opinion, which if addressed, would improve the scientific basis and synthesis of information used in the biological opinion. Issue 7, lack of a comprehensive population approach to jeopardy assessment, pertains to the biological opinion. However, issues that should be addressed in the BA include discussions of the potential effects of smolt migratory behavior and predatory fish on juvenile survival (Issue 9), inadequate accounting for fluctuations in ocean conditions that effect salmon survival (Issue 14), and too little attention devoted to effects of future global climate change (Issue 15).
 - ii. Jean-Jacque Maguire (Center for Independent Expert reviewer, January 12, 2006) stated (on page 8 of 21) that,

"The salmon mortality model only evaluates the effects of temperature on mortality for early life stages, and it does not evaluate potential impact on emergent fry, smolts, juvenile emigrants, or adults, nor does it consider other sources of mortality (in-stream flows, predation, etc.), which at times may be more important than temperature related mortality. As such, it is of limited usefulness."
- As previously discussed, please provide responses as to how each peer review comment was addressed in the 2008 OCAP BA, as appropriate.

6. Any other relevant available information on the action, the affected listed species, or critical habitat [50 CFR 402.14(c)(6)].

- a. Reclamation did not include a listing of the references cited in the OCAP BA. This is critical in determining if the best scientific and commercial data available was used in developing the BA [50 CFR 402.14(d)].

Essential Fish Habitat

The following information is necessary to include in the EFH Assessment.

1. Pacific Coast Salmon (Salmon) EFH
 - a. The Upper Klamath-Trinity Rivers Chinook salmon Evolutionarily Significant Unit (ESU) is exposed to the same project-related stressors (*e.g.*, high temperatures, low flows, limited spawning/rearing habitat, *etc.*) as the ESA-listed Southern Oregon/Northern California Coast coho salmon ESU, which is analyzed in the BA. Therefore, potential effects to the EFH of the Upper Klamath-Trinity Rivers Chinook

salmon ESU associated with the operation of the project should also be included in the EFH Assessment.

- b. There is a substantial amount of information included in Appendix A (entitled "Identification and Description of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon") of the Salmon Fishery Management Plan (FMP) that should be incorporated into the EFH Assessment.
- c. Salmon FMP Appendix A, Section 3.2: Tables A-8 and A-9 should be used to develop a comprehensive list of all the habitat types and components that can be impacted by activities associated with the operation of the project. Once established, this list should serve as the basis for evaluating impacts to EFH in each watershed to ensure a more consistent and comprehensive assessment. Table A-10 should also be used to evaluate how the project operations perform with respect to established indicators and ranges of acceptable values in each watershed. Moreover, the information within Table A-11 should be utilized to further address habitat concerns during specific life stages. Finally, the detailed information regarding potential impacts and conservation measures associated with nonfishing activities provided in section 3.2.5 is useful in determining any effect to the functioning of Salmon EFH. Therefore, incorporating this information into the EFH Assessment would improve the utility of the document.
- d. OCAP BA pp.16-6 through 16-48. There is a general lack of detailed information to accurately assess potential impacts to Salmon EFH within a given watershed associated with project operations. There are many cases throughout the EFH Assessment where potential effects are mentioned, but not fully assessed. For example:
 - i. The entrainment issue associated with the export pumps is mentioned on OCAP BA p.16-6 as having a "potentially significant but unknown impact," but no additional information is provided.
 - ii. OCAP BA p.16-48 states "Adult migration can be influenced by cross-channel operations and salinity gate operations within the Suisun Marsh area," yet this issue/statement is not developed further.
 - iii. The issue of redd dewatering or fry stranding may be introduced as being possible at certain times. However, specific flow levels or times of year during which those issues are likely to occur are not provided.
 - iv. Data on temperatures within an individual watershed that are known to cause increased disease incidence, and when those temperatures have been exceeded in the past, are not provided. Disease incidence, as it pertains to spring-run Chinook salmon at the Oroville Facilities on the Feather River, was discussed (OCAP BA p.5-45). However, it was not apparent where, if at all, this issue was addressed for fall-run Chinook salmon.
 - v. The information pertaining to the American River provides a potential example of a watershed where this type of evaluation and comparison with threshold values, or goals, was attempted, and therefore, where an adequate assessment of adverse impacts to salmon EFH may be possible.
 - vi. OCAP BA pp.16-30 through 16-32: The "Sacramento River" section provides a list of stressors identified in the Sacramento River and focuses on water temperature and flow fluctuations as the main short-term factors affected by project operations. In addition to providing spawning run times (and which runs face the most difficult conditions), the assessment includes figures depicting historical fall-run Chinook

salmon escapements and daily average flows in the river. However, the flow figure lacks data from 2002 – present, a critical time period in which a major decline in spawning escapement for fall-run Chinook salmon has occurred (especially the 2007 returns). This section needs a discussion of the different flow regimes that led to unsuccessful (and successful) broods, threshold flows and temperatures in the river, *etc.* For instance, at what flow level, especially in the stretch of the Sacramento River from Keswick Dam downstream to Red Bluff where the majority of Chinook salmon spawning occurs, does redd dewatering and/or the stranding of fry and juveniles occur? During what times of the year are these flow levels most likely to be observed? Without specific information on what flows and temperatures can be expected to negatively (and positively) impact these runs, such as historical time series data showing these threshold levels and previous instances when they have been exceeded, assessing their effects on EFH for fall- and late fall-run Chinook salmon will be highly problematic.

- vii. OCAP BA p.16-32: The temperature control device used to maintain desirable water temperatures in the Sacramento River for downstream fish habitat is mentioned here. However, there is no specific discussion as to how this device is used to address habitat needs for fall- and late fall-run Chinook salmon.
- viii. A conclusion is made that although the temperatures below Thermalito will be too warm for adult holding and spawning, they will be appropriate for juvenile rearing and emigration (OCAP BA p.16-50). Yet on OCAP BA p.16-42, it was noted that the vast majority of fish in the lower Feather River system emigrate as fry, indicating a limited amount of rearing habitat or a decrease in habitat suitability later in the season. Therefore, an analysis demonstrating the specific seasonal flow and temperature conditions that elicit the early migration response should be incorporated into the assessment. Alternatively, at a minimum, some additional explanation as to the specific conditions and/or thresholds that affect the habitat suitability, or lack thereof, in these different reaches in the Feather River should be included.
- ix. OCAP BA p. 16-50: The “Feather River” section concludes that flow and water temperature should be suitable year round for all fall-run Chinook salmon life history stages in the low flow channel (LFC). However, there is no rationale supporting this statement included within the text other than the statement that the remaining flow after diversions is typically 600 cfs in that section of the channel. In fact, on p.16-44, the statement was made that mean monthly flows in the LFC are only 5 – 38 percent of pre-dam levels. There is a discussion about general patterns regarding current and historic flows, but the assessment lacks specific information to compare with suitable temperatures for different life-stages.
- e. OCAP BA p.16-23: The “Population Trends” section lacks any discussion referring to the sharp decline in salmon production in the Central Valley in recent years. This decline includes a record low number of returning age-2 fish in 2007, and a record low projection of approximately 59,000 Sacramento River fall-run Chinook salmon returning in 2008. These circumstances led to an unprecedented total closure of Chinook salmon-directed fisheries off the coasts of California and Oregon in 2008. The magnitude of the population decline and the highly unusual actions taken to restrict the harvest of these fish warrant further discussion on this topic.

- f. OCAP BA p.16-27: The "Hatchery History and Operations" section is incomplete.
 - g. OCAP BA p.16-28. The "Hydrology" section is incomplete and limited to only two flow graphs, which are not referenced in the text.
2. West Coast Groundfish (Groundfish) EFH
 - a. Amendment 19 and Appendices B, C and D include extensive material on EFH for groundfish species and should be used to evaluate the need to include additional groundfish species in the EFH Assessment. Specifically, several species, including Leopard Shark, Lingcod, English Sole and various rockfish species, are documented as having one or more life stages associated with estuarine environments (see summaries in tables 1 – 8 at the end of Section B.2 of Appendix B). The specific use of San Francisco Bay by various species, which is particularly relevant to this project, is included in Appendix B. If the review does not result in additional species being included in the assessment, justification as to why only starry flounder was chosen should be provided.
 - b. Appendix D (entitled "Nonfishing Effects on West Coast Groundfish Essential Fish Habitat and Recommended Conservation Measures") of the Groundfish FMP is divided into sections that address specific activities, describe any potential adverse impacts to EFH, and recommend conservation measures. Information from Appendix D that applies to OCAP should be incorporated into the EFH Assessment.
 - c. OCAP BA p.16-1: Starry flounder is referred to here as a "monitored" species under the Groundfish FMP. However, unlike the CPS FMP, the Groundfish FMP does not distinguish between managed and monitored (or assessed and unassessed) species.
 3. Coastal Pelagic Species (CPS) EFH
 - a. Appendix D to the CPS FMP should be used to evaluate the need to include additional CPS species in the EFH Assessment. If the review does not result in additional species being included in the assessment, justification as to why only Northern anchovy was chosen should be provided.
 - b. Appendix D to the CPS FMP addresses EFH for CPS species, which includes information on the general distribution of different life stages for the different species managed under the CPS FMP (e.g., table 2.0 of Appendix D). Information from Appendix D that applies to OCAP should be incorporated into the EFH Assessment.
 4. Complete citation (and as stated above, the references), to all documents cited, including "NOAA ()" (OCAP BA p.16-7); "(citation)" (OCAP BA p.16-21), and "Stein xxxx" (OCAP BA p.16-21).

